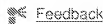



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## ↑ ABSTRACT

Our system suggests likely identity labels for photographs in a personal photo collection. Instead of using face recognition techniques, the system leverages automatically available context, like the time and location where the photos were taken. Based on time and location, the system

automatically computes event and location groupings of photos. As the user annotates some of the identities of people in their collection, patterns of re-occurrence and co-occurrence of different people in different locations and events emerge. The system uses these patterns to generate label suggestions for identities that were not yet annotated. These suggestions can greatly accelerate the process of manual annotation and improve the quality of retrieval from the collection. We obtained ground-truth identity annotation for four different photo albums, and used them to test our system. The system proved effective, making very accurate label suggestions, even when the number of suggestions for each photo was limited to five names, and even when only a small subset of the photos was annotated.


## ↑ REFERENCES

Note: OCR errors may be found in this Reference List extracted from the full text article. ACM has opted to expose the complete List rather than only correct and linked references.

- 1  [Marc Davis, Simon King, Nathan Good, Risto Sarvas, From context to content: leveraging context to infer media metadata, Proceedings of the 12th annual ACM international conference on Multimedia, October 10-16, 2004, New York, NY, USA \[doi> 10.1145/1027527.1027572\]](#)
- 2  [Andreas Girsensohn, John Adcock, Lynn Wilcox, Leveraging face recognition technology to find and organize photos, Proceedings of the 6th ACM SIGMM international workshop on Multimedia information retrieval, October 15-16, 2004, New York, NY, USA \[doi> 10.1145/1026711.1026728\]](#)
- 3  [Adrian Graham, Hector Garcia-Molina, Andreas Paepcke, Terry Winograd, Time as essence for photo browsing through personal digital libraries, Proceedings of the 2nd ACM/IEEE-CS joint conference on Digital libraries, July 14-18, 2002, Portland, Oregon, USA \[doi> 10.1145/544220.544301\]](#)
- 4 [E. Hjelmas and B. K. Low, Face detection: a survey, Computer Vision and Image Understanding, 83\(3\), 2001.](#)
- 5  [Allan Kuchinsky, Celine Perin, Michael L. Creech, Dennis Freeze, Bill Serra, Jacek Gwizdka, FotoFile: a consumer multimedia organization and retrieval system, Proceedings of the SIGCHI conference on Human factors in computing systems: the CHI is the limit, p.496-503, May 15-20, 1999, Pittsburgh, Pennsylvania, United States \[doi> 10.1145/302979.303143\]](#)
- 6  [Mor Naaman, Susumu Harada, QianYing Wang, Hector Garcia-Molina, Andreas Paepcke, Context data in geo-referenced digital photo collections, Proceedings of the 12th annual ACM international conference on Multimedia, October 10-16, 2004, New York, NY, USA \[doi> 10.1145/1027527.1027573\]](#)
- 7 [M. Naaman, A. Paepcke, and H. Garcia-Molina, From where to what: Metadata sharing for digital photographs with geographic coordinates. In 10th International Conference on Cooperative Information Systems \(CoopIS\), 2003.](#)

- 8  [Mor Naaman, Yee Jun Song, Andreas Paepcke, Hector Garcia-Molina. Automatic organization for digital photographs with geographic coordinates. Proceedings of the 4th ACM/IEEE-CS joint conference on Digital libraries, June 07-11, 2004, Tuscon, AZ, USA \[doi> 10.1145/996350.996366\]](#)
- 9  [Risto Sarvas, Erick Herrarte, Anita Wilhelm, Marc Davis. Metadata creation system for mobile images. Proceedings of the 2nd international conference on Mobile systems, applications, and services, June 06-09, 2004, Boston, MA, USA \[doi> 10.1145/990064.990072\]](#)
- 10 [Direct Annotation: A Drag-and-Drop Strategy for Labeling Photos. Proceedings of the International Conference on Information Visualisation, p.88, July 19-21, 2000](#)
- 11  [Kentaro Toyama, Ron Logan, Asta Roseway. Geographic location tags on digital images. Proceedings of the eleventh ACM international conference on Multimedia, November 02-08, 2003, Berkeley, CA, USA \[doi> 10.1145/957013.957046\]](#)
- 12 [W. Wagenaar. My memory: A study of autobiographical memory over six years. Cognitive psychology, 18:225--252, 1986.](#)
- 13 [L. Wenyin, S. Dumais, Y. Sun, H. Zhang, M. Czerwinski, and B. Field. Semi-automatic image annotation. In 8th International Conference on Human-Computer Interactions \(INTERACT 2001\).](#)
- 14 [Ming-Hsuan Yang, David J. Kriegman, Narendra Ahuja. Detecting Faces in Images: A Survey. IEEE Transactions on Pattern Analysis and Machine Intelligence, v. 24 n.1, p.34-58, January 2002 \[doi> 10.1109/34.982883\]](#)
- 15  [Lei Zhang, Longbin Chen, Mingjing Li, Hongjiang Zhang. Automated annotation of human faces in family albums. Proceedings of the eleventh ACM international conference on Multimedia, November 02-08, 2003, Berkeley, CA, USA \[doi> 10.1145/957013.957090\]](#)
- 16  [Lei Zhang, Yuxiao Hu, Mingjing Li, Weiying Ma, Hongjiang Zhang. Efficient propagation for face annotation in family albums. Proceedings of the 12th annual ACM international conference on Multimedia, October 10-16, 2004, New York, NY, USA \[doi> 10.1145/1027527.1027689\]](#)
- 17  [W. Zhao, R. Chellappa, P. J. Phillips, A. Rosenfeld. Face recognition: A literature survey. ACM Computing Surveys \(CSUR\), v. 35 n.4, p.399-458, December 2003 \[doi> 10.1145/954339.954342\]](#)

↑ CITED BY 7

-  [Marc Davis, Michael Smith, John Canny, Nathan Good, Simon King, Rajkumar Janakiraman. Towards context-aware face recognition. Proceedings of the 13th annual ACM international conference on Multimedia, November 06-11, 2005, Hilton, Singapore](#)



[Bageshree Shevade](#), [Hari Sundaram](#), [Lexing Xie](#), [Modeling personal and social network context for event annotation in images](#), [Proceedings of the 2007 conference on Digital libraries](#), June 18-23, 2007, Vancouver, BC, Canada



[Morgan Ames](#), [Mor Naaman](#), [Why we tag: motivations for annotation in mobile and online media](#), [Proceedings of the SIGCHI conference on Human factors in computing systems](#), April 28-May 03, 2007, San Jose, California, USA



[Amit Zunjarwad](#), [Hari Sundaram](#), [Lexing Xie](#), [Contextual wisdom: social relations and correlations for multimedia event annotation](#), [Proceedings of the 15th international conference on Multimedia](#), September 25-29, 2007, Augsburg, Germany



[Paulo Barthelmeß](#), [Edward Kaiser](#), [Xiao Huang](#), [David McGee](#), [Philip Cohen](#), [Collaborative multimodal photo annotation over digital paper](#), [Proceedings of the 8th international conference on Multimodal interfaces](#), November 02-04, 2006, Banff, Alberta, Canada



[Xiaonan Lu](#), [Prasenjit Mitra](#), [James Z. Wang](#), [C. Lee Giles](#), [Automatic categorization of figures in scientific documents](#), [Proceedings of the 6th ACM/IEEE-CS joint conference on Digital libraries](#), June 11-15, 2006, Chapel Hill, NC, USA

[Bongwon Suh](#), [Benjamin B. Bederson](#), [Semi-automatic photo annotation strategies using event based clustering and clothing based person recognition](#), [Interacting with Computers](#), v.19 n.4, p.524-544, July, 2007

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